National Shade Tree Conference

CONVENTION ISSUE

LA SALLE HOTEL
CHICAGO, ILLINOIS
August 25th - August 27th, 1942

Trees

The Journal of American Arboriculture

July-August, 1942

"PREVENT FOREST FIRES"

25 Cents

ADD A BOOK-A-MONTH TO YOUR LIBRARY

(Black figures following price indicate issue in which book was reviewed)

MAINTENANCE OF SHADE AND ORNAMENTAL TREES
P. P. Pirone—$5.00—**(Vol. 4—2)**

STANDARD CYCLOPEDIA OF HORTICULTURE
Liberty H. Bailey—$15.00

AN ILLUSTRATED MANUAL OF PACIFIC COAST TREES
McMinn and Maino—$3.50 **(Vol. 1—3)**

FORESTRY PATHOLOGY
Dr. John S. Boyce—$5.00 **(Vol. 1—3)**

STANDARDIZED PLANT NAMES (2nd Edition)
H. P. Kelsey—W. A. Dayton—$10.50—**(Vol. 5—2)**

KNOWING YOUR TREES
G. H. Collingwood—$2.50—**(Vol. 5—1)**

INSECT ENEMIES OF SHADE TREES
Glenn W. Herrick—$4.50 **(Vol. 1—4)**

TREES OF NORTHEASTERN UNITED STATES
H. P. Brown—$3.00 **(Vol. 1—4)**

FOREST TREES OF THE PACIFIC COAST
W. A. Eliot—$5.00 **(Vol. 1—4)**

FOREST INSECTS
Doane, Van Dyke, Chamberlin and Burke—$4.50—**(Vol. 1—4)**

OUR SHADE TREES
Ephraim Porter Felt—$2.00 **(Vol. 1—4)**

CONSPICUOUS CALIFORNIA PLANTS
Ralph D. Cornell—$4.00 **(Vol. 2—1)**

THE WORLD WAS MY GARDEN
David Fairchild—$3.75 **(Vol. 2—1)**

AN INTRODUCTION TO AMERICAN FORESTRY
Shirley W. Allen—$3.50 **(Vol. 2—1)**

PROPAGATION OF PLANTS
M. G. Kains & L. M. McQuestion—$3.50 **(Vol. 2—1)**

MANUAL OF SOUTHERN CALIFORNIA BOTANY
Philip A. Munz—$5.00 **(Vol. 2—1)**

SAGAS OF THE EVERGREENS
Frank H. Lamb—$3.50 **(Vol. 2—2)**

ORNAMENTAL PLANTS FOR SUBTROPICAL REGIONS
Roland Stewart Hoyt—$3.15 **(Vol. 2—2)**

THE WORLD OF PLANT LIFE
Clarence J. Hylander—$7.50 **(Vol. 2—3)**

AMERICAN HIGHWAYS AND ROADSIDES
Jac. L. Gubbels—$2.75 **(Vol. 2—3)**

HORTUS SECOND
Liberty H. Bailey & Ethel L. Bailey—$12.00 **(Vol. 4—4)**

ILLUSTRATED MANUAL OF CALIFORNIA SHRUBS
H. E. McMinn—$5.00 **(Vol. 3—2)**

BOOK OF THE BROADLEAF TREES
Frank H. Lamb—$3.75 **(Vol. 3—2)**

TREE CLEARANCE FOR OVERHEAD LINES
G. D. Blair—$3.75 **(Vol. 3—3)**

MANUAL OF CULTIVATED TREES AND SHRUBS
Alfred Rehder—$10.50 **(Vol. 3—3)**

NURSERY COST FINDING
John Surtees—$7.50 **(Vol. 3—4)**

ILLUSTRATED FLORA OF PACIFIC STATES
LeRoy Abrams—$7.50 **(Vol. 3—4)**

HILL'S BOOK OF EVERGREENS
L. L. Kumlein—$3.50 **(Vol. 3—4)**

TREES OF SANTA BARBARA
Maunsell Van Rensselaer—$1.50 **(Vol. 3—4)**

IMPORTANT TREE PESTS OF THE NORTHWEST
$1.00 **(Vol. 4—1)**

COMMERCIAL TIMBERS OF THE UNITED STATES
H. P. Brown and A. J. Panshin—$5.00 **(Vol. 4—2)**

THE ADVANCE OF THE FUNGI
E. C. Large—$4.00—**(Vol. 4—6)**

HUNGER SIGNS IN CROPS
Edited by Gove Hambidge—$2.50 **(Vol. 4—3)**

PRUNING TREES AND SHRUBS
E. Porter Felt—$2.00 **(Vol. 4—3)**

TEXTBOOK OF DENDROLOGY
Harlow & Harrar—$4.50 **(Vol. 5—2)**

ROCKY MOUNTAIN TREES
Richard J. Preston—$2.00 **(Vol. 4—4)**

COMMERCIAL FERTILIZERS
G. H. Collings—$4.50—**(Vol. 4—6)**

APPLIED SILVICULTURE IN THE UNITED STATES
R. H. Westveld—$5.00 **(Vol. 3—1)**

TREES OF THE SOUTH
Charlotte Hilton Green—$2.50 **(Vol. 3—1)**

FLOWERING SHRUBS OF CALIFORNIA
Lester Rountree—$3.00 **(Vol. 3—1)**

All of the above Books may be ordered from

TREES ➡ *"The Journal of American Arboriculture"*

P. O. Box 886 **Santa Monica, California**

TREES Magazine is a bi-monthly Journal published at Santa Monica, California, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. P. O. Box 886, Santa Monica, California. Subscription by mail, $1 per year; outside United States, $1.50. Advertising rates upon inquiry. Unsolicited manuscripts must be accompanied by postage return.

ALONG THE WAY

With . . .
EDW. SCANLON

■ According to DOC BLUME, TEXAS (part of the U. S. SINCE they AGREED TO WEAR SHOES) is the ONLY PLACE in the world where you can stand KNEE DEEP IN MUD and have DUST BLOW in YOUR EYES.

* * *

■ *Also, may we CALL YOUR ATTENTION to the COVER OF TREES for THIS ISSUE. VERY FEW, if any, magazines that PAID TRIBUTE to THE FLAG by using it on their covers, USED IT PROPERLY. They carried their name OVER THE FLAG —t'aint right boys and gels, but GOOD OLD TREES never misses a beat.*

* * *

■ A year or so ago, F. C. THOMAS, Arborist of GREENSBORO, N. C., suggested we run a picture and data on the BIG CYPRESS at Oaxaca, Mexico. We didn't happen to have a pic, in fact had NEVER SEEN a real good one of this FAMOUS "BIGGIE" until t'other day this SAME THOMAS lad sent two honeys that he took on a recent trip.

YOU'LL SEE them in THIS ISSUE.

* * *

■ *KARL Amalia, partner of MIKE (the goon) HARTNEY in TREE BUTCHERVATION in, about and near Boston, is PARTNERING with UNCLE SAM now and doing CAMOUFLAGE work out of SAN FRANCISCO. Karl says, quote, "I'M GETTING A CHANCE TO STUDY YOUR BEAUTIFUL CALIFORNIA AT FIRST HAND. FIND IT EVERYTHING YOU SAID." All right, YOU SCOFFERS.*

* * *

■ You know the 18th NATIONAL SHADE TREE CONFERENCE is going to go on in spite of the FLANKING MOVE by the Army whereby they TOOK OVER the original hotel headquarters LOCK, STOCK AND BARRELS, as well as jugs.

THE NEW HOTEL is the LASALLE, and the date is AUGUST 25—ONLY TWO DAYS this time—catch it, boys, it'll be WORTH WHILE.

* * *

■ *CARL WOLF recently sent out sets of monthly bulletins published by the RANCHO SANTA ANA BOTANIC GARDEN.*

55 of them and VERY, VERY GOOD. Each discussed one CALIFORNIA NATIVE PLANT. Does this mean we are on the PERMANENT MAILING LIST, CARL? OK—thanks!

* * *

■ Several weeks ago DANA BOWERS and I went down to the madhouse of defense cities, SAN DIEGO—on the way we saw a MARVELLOUS STREET or RED EUCALYPTUS in full bloom (E. ficifolia). It is NARCISSUS STREET just south of BALBOA and crosses EL CAMINO REAL. Got some gorgeous color shots. For this species the trees were UNUSUALLY UNIFORM, BOTH IN SIZE AND COLOR. THEY WERE GROWING DRY. As a rule the color runs from WHITE THRU SHADES of salmon and orange to the true color of MAROON. A gorgeous sight.

Looks like H.D.B. will plant many along the hiway from OCEANSIDE TO SAN DIEGO. We want to see that sight.

Another fine street of FICIFOLIAS is MYERS STREET in OCEANSIDE.

■ *A month or so ago, GLENN GARWOOD, Park Super of SOUTH PASADENA, Calif., got a little trouble. Seems like a LOCAL TREE SKINNER agitated several well-meaning clubs to the point where THEY STORMED the CITY COUNCIL to get them to spend some geetus (about 200) to repair an HISTORIC TREE called the CATHEDRAL OAK. Except for a HUNDRED OR so leaves on A SUCKER ten feet off the ground the 40-foot tree WAS DEAD, in fact, IN AN ADVANCED STATE OF DECOMPOSITION.*

The CLUBS HOWLED, the COUNCIL SQUIRMED—so Glenn called in a diagnosis committee composed of FRED ROEWEKAMP CITY FORESTER of Los Angeles; TED HOLDERNESS, CITY ARBORIST of Pasadena; W. S. ROWLAND, Arborist, ROWLAND & NEWHOUSE TREE SERVICE, and "ALONG-THE-WAY"—result the CATHEDRAL OAK is ordered REMOVED as a MENACE TO LIFE AND PROPERTY. TWENTY YEARS AGO the aspiring SAVER OF TREES might have had a chance; but wait 'till you SEE THE PICTURE in the NEXT ISSUE, it arrived too late for this number.

* * *

■ It looks very much as if "BELIEVE IT OR NOT" RIPLEY made an error in his JULY 28th cartoon. He calls the HOOKER OAK at CHICO, CALIFORNIA, the "LARGEST OAK TREE IN THE WORLD." Well, Robert, what do you think of THESE FIGURES:

Breaux Live Oak—35' D.B.H.—75' hi—166' spread, Louisiana.

Bouquet Canyon Live Oak—34' D.B.H.—100' hi—150' spread, California.

Hooker Oak—28' D.B.H.—110' hi—150' spread, California.

Figures from "FAMOUS TREES" publication of the U. S. DEPT. OF AGRICULTURE.

* * *

■ *DOUG BARNES, Supt. of DADE CO. FLORIDA PARKS, has gone in the Army. Whilst he's gone his shoes will be used by WM. COOK.*

* * *

■ No, you WASHINGTON POLITICIANS, it's NOT THE PEOPLE who are APATHETIC toward the war—IT'S YOU, you are PATHETIC.

* * *

■ *In connection with the note on GOLDEN-RAIN TREES (KOELREUTERIA PANICULATA) several issues ago, DOC CHADWICK OF OHIO STATE adds, "We have a number here on the Campus which we started from seed some years ago (1934). The trees are now 14 to 18 feet high and are doing very well. They have flowered well for the last three years and we have experienced no difficulty from winter injury. We did find some difficulty with the seedlings from winter injury when they were in the seed beds, but since the plants have become larger and are well established, we have had no trouble whatsoever. We think it is a tree that can well be used to greater extent."*

Anybody else WITH INFO on this DROUGHT RESISTING tree?

CONTENTS

Vol. 5 Bi-Monthly No. 4

Subscription Price $1.00 per Year

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

Editorial 4
The Arborist—Today and Tomorrow Get A New Member
13th National Shade Tree Conference 5
A Case In Diagnosis 6
Mielke and Kimmey
The Tree Butchers Trade-mark . . . 6
Material and Tool Priorities for the Arborist 7
Raymond B. Overton
The Story of Red and White Hemlock 8
John C. Swartley
A Price Tag On Street Trees . . . 9
Edward A. Connell
The Soil Factor in Diagnosis . . . 10
A. Robert Thompson
The Big Mexican Taxodium 11
F. C. Thomas
Tree Series—Thornless Honeylocust . 12
L. C. Chadwick
Forester and Arborist 13
Rush P. Marshall
More Upright Trees 14
S. Carolina Can Grow Cork Oaks . . 15
Where To See Redwoods 16
Pine-Leaf Scale 18
Book Reviews 18

■ I don't know how TREES RATES, but we received a subscription the other day from STATE SENATOR THOMAS C. DESMOND OF NEWBURGH, NEW YORK. Thanks, Senator. It's good to know that some of our lawmakers THINK OF TREES once in a while—too bad more of them do not realize the tremendous value of FOREST AND SHADE TREES to a nation's WELFARE AND ECONOMY.

Incidentally, YOU ARBORISTS IN NEW YORK might discuss a CERTIFIED ARBORISTS BILL with SENATOR DESMOND. With that IRISH name he must be OK.

TREE SURGERY EQUIPMENT
Write for 96 Page Catalog Showing Complete Line
•
PRUNING EQUIPMENT
BRACING MATERIALS
CAVITY TOOLS
ANTISEPTIC COMPOUNDS
•
A. M. LEONARD & SON
PIQUA, OHIO
Established 1885

July-August, 1942 *The Journal of American Arboriculture* Volume 5 — No. 4

EDWARD H. SCANLON, Editor
Editorial Office: 1102 Twentieth Street—P. O. Box 886—Santa Monica, California

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; *a country without trees is hopeless*"

ADVISORY COUNCIL

L. C. Chadwick
Assoc. Professor of Horticulture
Ohio State University, Columbus, O.

Gilbert L. Skutt
Supt. of Parks, Los Angeles, Calif.

A. Robert Thompson
Forester, National Park Service
Washington, D. C.

M. B. Pratt
State Forester, Sacramento, Calif.

Karl Dressel
Assoc. Prof. Forestry, Michigan State College
East Lansing, Mich.

L. Glenn Hall
Landscape Architect, San Francisco, Calif.

H. Dana Bowers
State Landscape Engineer
Sacramento, Calif.

Harold S. Newins
Director School of Forestry, University of Florida
Gainesville, Florida

Emanuel Fritz
Associate Professor of Forestry
University of California, Berkeley, Calif.

Charles F. Irish
Arborist, Cleveland, Ohio

P. P. Pirone
Assoc. Prof. Plant Path., Rutgers University
Research Specialist, N. J. Agri. Exp. Sta.

Dr. Donald Wyman
Horticulturist, Arnold Arboretum
Jamaica Plain, Mass.

Fred N. Evans
Supt. of Parks, Sacramento, Calif.

GEORGE T. DALTON
City Arboriculturist, Seattle, Washington

Dr. Leroy Abrams
Director, Natural History Museum,
Stanford University

Frank Herbert
Entomologist, San Francisco, Calif.

Ralph D. Cornell
Landscape Architect, Los Angeles, Calif.

CORDIALLY YOURS

THE ARBORIST—TODAY AND TOMORROW

It would seem that the Arborist in war and in the peace to follow should be a very valuable person because of his knowledge of plant life—a knowledge not possessed by any other field of horticulturists or foresters. The Arborist, consciously or unconsciously, is primarily a diagnostician, trained from the beginning to discern abnormalities or failings in a plant's structure or function. This is his daily job.

In the present scheme of things we have war. The use of plants in war is not normal. They help to screen and obscure, from the enemy, installations of military value. Maintenance and acceleration of growth under these conditions is of paramount importance, and here the knowledge of the Arborist is not equalled by any other field. To date, however, these facts have not been recognized by the military authorities, they apparently having gone in for "beautification" rather than utility.

When peace descends once more we will no doubt be in for a rennaisance in the planning of our cities. Here street trees will, or should if the planning amounts to anything, play a major role. Again the Arborist, with specialized training in Municipal tree care, is in a position to render invaluable service. Only one who has worked on trees, pruned, fed, cabled, and dug into the hearts of trees can know their likes and dislikes to the point where future maintenance costs will be reduced to a minimum and appearance will predominate.

The planning and management of future street tree programs is the forte of the Arborist, just as his services should be in demand today. The Arborist needs a pressure group also it seems.

GET A NEW MEMBER

The most serious indictment that can be made against members of the National Shade Tree Conference, East or West, North or South, is their generally dilatory attitude toward encouraging new members among Arborists, City Foresters, Park Superintendents, Nurserymen and others.

Why this condition exists is difficult to understand because most conference members that we have met are very enthusiastic and proud of their affiliation with this splendid organization. Why, with this pride, each member cannot secure at least one new member each year is indicative of one or two things. Either they have not realized the value of a greatly enlarged membership or they figure that it is the province of "George."

The conference could be ten times more valuable to its members if it had several thousand members—and why not?

Let's start the drive now to "Get A New Member."

N. S. T. Conference on in Chicago; LaSalle Hotel, Aug. 25th

Adopting a strictly wartime theme the 18th National Shade Tree Conference has finally found a resting place in which to hold its scheduled meeting. The LaSalle Hotel will be the headquarters; a decision reached after the Army had commandeered the hotel originally chosen.

TUESDAY, AUGUST 25

10:30-12:00—Open meeting of the National Arborists' Association. Priority Regulations on Tools, Equipment and Materials—Lee R. McCullough, War Production Board, Chicago. Consumer Services—Leonard Sperry, Office of Price Administration, Chicago.

3:15 p. m.—Arboriculture and National Defense. How May the Arboricultural Profession Serve a National War. Panel Discussion—The Commercial Arborist: Vance I. Shield, Shield, Shield Shade Tree Specialists, Clayton, Missouri. The City Forester and Park Superintendent: J. M. Bennett, Supt. of Parks and Forestry, Wayne County Road Commissioners, Detroit, Michigan. The Scientist: E. P. Felt, Director, Bartlett Tree Research Laboratories, Stamford, Conn.

7:30 p. .m.—Meeting of City Foresters and Park Superintendents. Lounge, 18th Floor, LaSalle hotel.

WEDNESDAY, AUGUST 26

9:00 a.m.—Status of Insecticides and Fungicides. Panel Discussion—War-time Entomology, Present and Future Supplies, Substitutes and New Materials: F. C. Bishopp, Asst. Chief, Bureau of Entomology and Plant Quarantine, U.S.D.A., Washington, D. C. Workable Formulae in War Times—Insecticides: J. S. Houser, Dept. Entomology, Ohio Agricultural Experiment Station, Wooster, Ohio. Fungicides: Paul E. Tilford, Dept. Plant Pathology, Ohio Agricultural Experiment Station, Wooster, Ohio.

1:30 p. m.—Plant Materials. Panel Discussion—Trees and Roads in War Times: H. J. Neale, Landscape Engineer, Dept. of Highways, Richmond, Virginia. Selection of Plants for City Conditions, Recreational Forestry Areas and Other Definite Uses: A. L. Boerner, Landscape Architect, Regional Planning Department, Milwaukee, Misconsin. Fastigiate Trees: Malcolm A. Milne, City Forester, Rochester, N. Y.

4:15 p.m.—Soil Micro-organisms: L. M. Turk, Associate Professor of Soils, Michigan State College, East Lansing, Mich.

5:00 p. m.—A Method of Hastening Wound Healing—Carl Fenner, Assistant City Forester, Lansing, Michigan.

THURSDAY, AUGUST 27

9:00 a. m.—Current Insect and Disease Problems. Panel Discussion.

Diseases—Practical Aspects of Tree Injection for Disease Control: A. W. Dodge, the F. A. Bartlett Tree Expert Co., Cambridge, Mass. Phloem Necrosis: Paul E. Tilford, Dept. Plant Pathology, Ohio Agricultural Experiment Station.

Cover Photo

by BETTY EVANS, *Santa Monica, Calif.*

Control Diseases of SHADE TREES with COPPER HYDRO

An insoluble copper fungicide. Gives excellent control of various leaf spots, blights, rusts and certain other diseases of trees and shrubs. Safe, easy to mix, economical.

Write for Circular and Prices

CHIPMAN CHEMICAL CO., INC.

Palo Alto, Calif. Bound Brook, N. J. Chicago, Ill.

INSECTICIDES - FUNGICIDES - WEED KILLERS

AT 9th WESTERN CONF.—LONG BEACH

—*Photos courtesy Wally Milne, Arborist, Pasadena*

Upper left. Fred Roewekamp, Ted Holderness, Ray Hartman and Doctor H. E. Burke pose for a picture at The Ninth Western Shade Tree Conference held at Long Beach, Calif. They are supposedly planting the official tree.

Middle left. The Editor of TREES *really plants the tree. The tree is* VITEX LUCENS, *New Zealand Chaste Tree.*

Bottom left. Ross McIntire directs the activities of the field demonstrations via microphone. Connie Gordon sticks his chest out for some unknown reason, although he is kinda pretty.

Upper right. Tree hole-digging rig of the Los Angeles Forestry department performs.

Middle right. End of the rope climbing and pruning demonstration ends as the "skinner" skims to earth.

Lower right. Bill Jonson of the Destruxol Corp., tells a whopper as Ted Holderness, held down by the pipe, looks very skeptical, while the Editor stares in amazement wondering how Bill does it.

Keep Your Name Alive—Advertise in TREES

A Case In Diagnosis

Heat Injury To the Leaves of California Black Oak and Some Other Broadleaves

By J. L. MIELKE *and* J. W. KIMMEY

A reddish-brown discoloration of the leaves of California black oak (*Quercus kelloggii* (Newb.) became evident over extensive portions of this tree's range in the northern part of California early in July, 1941. On July 13, when the writers first observed affected trees in the upper Sacramento River Canyon, the injury was so pronounced that it imparted a reddish-brown cast to entire mountainsides. On the affected leaves, except for a relatively small percentage that turned entirely brown, the browning was confined mainly to a broad, irregularly shaped band around the margins. A high percentage of the most severely injured leaves dropped shortly after the injury occurred, but the majority of the leaves remained on the trees for the greater part of the summer. A few trees lost almost all their leaves in July, and most of these produced a small crop of new leaves that began to appear in late July and early August, accompanied by new woody growth.

No evidence of injury to the buds or twigs was found. Although no examinations were made of roots, it seems improbable that they were injured materially, considering the situation at Happy Camp, which is described below. Injury by smoke or fumes from manufacturing plants was unlikely since no such plants of consequence occur in that part of the State.

The browning of the leaves occurred quite generally on the slopes of the Sacramento River drainage up to an elevation of around 4,000 feet, and also in the Klamath River drainage in the vicinity of Happy Camp. The injury was noted as most severe in the vicinity of Delta, situated in the Sacramento Canyon about 25 miles north of Redding. A striking characteristic of the injury was its uniformity regardless of site conditions, i. e., degree of slope, aspect, or soil moisture conditions. Trees growing along the banks of streams were as severally affected as those on steep and well drained slopes.

An examination of numerous affected trees revealed no evidence of insect or fungus attack. Instead, the injury seemed plainly attributable to abnormal weather conditions. In the northern part of California precipitation and temperature during the winter of 1940-41 was considerably above normal. This was followed by a late spring with temperatures below and rainfall above normal at most stations. As a result of the cool, moist spring weather, together with an abundance of soil moisture from the heavy winter precipitation that occurred mainly in the form of rain, there was a luxuriant development of most plants. This was particularly the case with California black oak, which produced a good crop of large and succulent leaves that by early July had not yet attained a degree of maturity normal for that period.

There were a few hot days in the latter part of May and again the first part of June, but high temperatures for a continuous period did not occur until early in July. During the period July 5 to 12, inclusive, maximum temperatures at Redding ranged between 100° and 105° F. These are not excessively high early-July temperatures at this station. Since there is a difference of only about 600 feet in elevation between the two places, maximum temperatures at both should be fairly similar. A check of incomplete records at Delta indicate this to be the case.

During the cool period from June 22 to 26, inclusive, a total of 0.90 inch of rain fell at Redding. Following this short rainy period the maximum daily temperatures continued to rise almost with interruption until a peak of 105°F. was reached on July 5. Residents of Delta stated that the browned appearance of the oaks became evident a few days later. All evidence indicated the injury to be attributable to heat injury of the tender leaves induced by the sudden change to the high temperatures prevailing between July 5 and 12. There was an abundance of soil moisture at the time, no strong or drying winds occurred, and the relative humidity was not abnormally low for this section of the State. On the grounds of the U. S. Forest Service Ranger Station at Happy Camp it was of interest to note that California black oak was as severely browned as the trees of this species in the immediately adjacent forest, despite the fact that the lawn on which the station trees were growing was watered almost continuously during the hot spell by an efficient sprinkling system. This indicates that the injury could not be attributable to a lack of soil moisture.

The principal tree associates of the injured oak are ponderosa pine (*Pinus ponderosa*.. Laws.),.. digger.. pine.. (*P. sabiniana* Dougl.), Douglas-fir (*Pseudotsuga taxifolia* (Poir) Britton), bigleaf maple (*Acer macrophyllum* Pursh), white alder (*Alnus rhombifolia* Nutt.), and California buckeye (*Aesculus californica* (Spach) Nutt.). The conifers showed no evidence of heat injury and the broadleaves only occasional traces of it even though in many instances they were growing intermingled with severly affected California black oak trees.

From Redding southward about 30 miles to Red Bluff the main tree species are canyon live oak (*Quercus chrysolepis* Liebm.) and interior live oak (*Q. wislizenii* A. DC.). In general the leaves of these two oaks were moderately injured as compared with California black oak in the vicinity of Delta, although a small percentage of the trees of both

(Continued on page 12)

The Tree Butchers Trade-Mark

—Photo courtesy Bill Erdman

To all appearances our friend "Butch" tires rapidly. Or it could be that the weather suddenly turned cold which might account for the abrupt termination of this "concrete monument." In spite of the ragged shaping, it is a beautiful callus tho, isn't it? But of course the roof leaks pretty bad as you can imagine, anyway, TREES is grateful to Bill Erdman of the Asplundh Tree Expert Co., Omaha, for this fine example of how "not to do it."

Material and Tool Priorities for Arborists

By RAYMOND B. OVERTON
Secretary, Bartlett Mfg. Co.
Detroit, Mich.

Arborists, Park Departments and Nurserymen, along with many other essential civilian activities, are confronted with a serious shortage of materials, tools and equipment which will inevitably become more and more critical as war production soars. It seems obvious that many of the normally essential functions of the arborist must be curtailed, or even eliminated, in order to divert materials to more vitally important uses. With metals and chemicals of prime importance in war production, any use of such materials in less urgent fields must become subsidiary. Nevertheless, there are certain phases of the arborist's work which cannot safely be eliminated, and these deserve consideration in their proper turn.

Stripped of frills and legal language the Priorities and Allocation Regulations are intended to accomplish one end: to get the available raw materials and finished products to the places where they are needed most, and in the order of urgency in which they are required. Preference Ratings have been assigned to contractors for Army, Navy and other government requirements, to essential industries, and, upon application, to individual companies. Certain critical materials, such as manila rope, copper, alluminum, etc., have been controlled by Limitation Orders, prohibiting their use except in products essential to the war effort. Iron and steel are now being conserved by the method of prohibiting the manufacture or assembly of a long list of comparatively non-essential items, some 400 of them, ranging from awning frames to wheelbarrows. This list has already been amended by the addition of new items, and is certain to be increased to include many products which under ordinary circumstances would be termed essential.

The net result as far as materials for tree experts are concerned has been to ration available supplies, and to necessitate substitution wherever possible.

Manila rope was one of the first materials to be removed from the general market. Stocks of manila rope were frozen in the Fall of 1941, so that the sale of manila cordage, even when actually on hand, was prevented except in a few cases. By the terms of a recent order these restrictions have been tightened to the point where express permission must be obtained from Washington before manila rope may be sold for any use whatever, including the U. S. Government itself. As a substitute, however, we have sisal rope which is available without priority at the present time. This is about 80% as strong as manila, and is less satisfactory to use because of its coarser, rougher texture. It is recommended that by using a diameter one size larger than that of the manila rope formerly used for the same purpose, i.e., by using 5/8" diameter instead of 1/2" for climbing ropes, the disadvantage of decreased strength may be overcome; in fact, 5/8" sisal is considerably stronger than 1/2" manila by tensile strength tests.

Tin cans such as are used ordinarily for tree paint are no longer obtainable, and cans made of terne-plate have been used for some time now. After present stocks are exhausted there will be no more tin cans or steel drums available for this purpose. Fibre or wood containers will have to be substituted.

Composition rubber mallets are out of the picture, of course, but lignum vitae mallets are obtainable in their stead.

At present there are certain phases of the arborist's work to which a Preference Rating is assignable. A tree expert doing contract tree trimming, for instance, for an electric light and power utility, is entitled to buy materials under Preference Rating Order P-46.

This order applies a rating of A-5 to tools and materials used in maintenance work. The essential nature of line clearance work in the distribution of electrical energy clearly warrants a preferred rating over similar materials used in the care of ornamental trees. Similarly, contract tree trimming done for telephone and telegraph companies rates an A-3 under Preference Rating Order P-129, in view of the importance of maintenance and repair in operating essential communication lines.

Municipalities, highway departments, educational institutions, railroads, and others, are covered by Preference Rating Order P-100 which applies an A-10 rating of materials for maintenance, repair and operation.

There are various other general Preference Rating Orders, but these are the most applicable to the arborist field. Note the emphasis placed on repair and maintenance supplies. It is the policy of the War Production Board to provide every possible means of keeping existing equipment in usable condition. For this same reason, purchases of functional repair parts from manufacturers are given preferential treatment. With this in mind the arborist will be wise to take the best possible care of his present equipment, making all necessary repairs as promptly as possible.

The manufacturer's position is this: in most cases he cannot buy steel on a preference rating of less than A-1-j, and to obtain reasonably prompt delivery A-1-a is required. He must make an application to the War Production Board for his material requirements for each quarterly period. His allotment has been based upon the pattern of priorities shown by his shipments for the previous quarter. This, while an A-10 priority, or even an A-5 or A-3, would not be high enough to enable him to extend it with any hope of getting the material promptly, still the lower ratings are important in arriving at the total percentage of priorities, and, furthermore, the volume of material needed for repair parts, even though these shipments may have been rated as low as A-10, will be granted a rating sufficiently high to enable the manufacturer to supply repair parts to his customers.

In addition to a Preference Rating, effective July 1st every order must bear an Allocation Symbol and number, under Priorities Regulation No. 10, (a copy of which can be obtained from your War Production Board). The Symbols are:

The Army	USA
The Navy (and Maritime Commission)	USN
Lend-Lease	LL
Other foreign purchasers	FP
Domestic Purchasers	DP

The numbers run from 1.00 (Aircraft) to 23.00 (Misc.) and cover practically every type of manufacture and use. Electricity, for example, is in class 9.00, and takes the number 9.10. Roads, Streets, etc., construction and maintenance of, number 10.30. Telephone services take the number 11.10; telegraph is 11.30. Agricultural equipment takes class 13.00.

A properly certified order for material to be used in electric light and power maintenance would bear the following information:

Preference Rating A-5 (P-46).
Allocation Symbol: DP 9.10.

A signed statement certifying that the purchaser is entitled to apply the Pref-

(Continued on page 18)

The Story of Red and White Hemlock

By John C. Swartley
Dept. of Horticulture, Ohio State University, Columbus, O.

Foreword—The possible existence of different forest varieties of Canada hemlock has been discussed in the Bulletin of the Hemlock Arboretum (No. 19). The material presented in the following article has been adopted from this bulletin, supplemented by various letters in the possession of Charles F. Jenkins and also the writer. The situation is somewhat complicated since direct evidence has disappeared with the virgin stands of hemlock that showed alleged differences.

Woodsmen and botanists may be equally interested in trees but they neither speak the same language nor reach the same conclusions. Since time immemorial, botanists have observed differences that woodsmen have missed and woodsmen have observed differences that the botanist has missed or with which he is not concerned.

Lumbermen are interested in quality of timber. If they can associate differences in quality with environmental or growth characters, they can rate various stands according to quality. Eastern or Canada hemlock offers a specific illustration.

Woodsmen in various parts of the country have identified two kinds of hemlock, namely *red* hemlock and *white* hemlock. Henry W. Shoemaker of "Restless Oaks," McElhattan, has been in close touch with the lumber industry in Central Pennsylvania for many years. This is his version: " . . . On the main run of Slate Run, Lycoming County, was cut in 1910, the last of an immense area of white hemlocks, all identical, smooth black stems, small dark heads, in form like European spruces, especially when seen against the sky line on the mountain tops. Five miles to the north was a vast acreage of red hemlocks on the headwaters of Cedar Run, Lycoming County, heavy lavender or pink-brown plates, irregular form, shaggy, uneven tops. Though with no scientific knowledge, they appeared to every woodsman as separate varieties, possibly separate species."

A report from Nova Scotia mentioned *red* and *white* hemlock but the separation there, is based on environment rather than on form. The Dominion Forest Service maintains a Pulp and Paper Division Laboratory in Montreal, and users of hemlock wood in Nova Scotia and other provinces have repeatedly mentioned the characteristics of the wood of the two varieties in corresponding with this laboratory. Lumbermen in Nova Scotia distinguish *white* or upland hemlock from the *red* or lowland hemlock and a pronounced difference in the quality of the wood of the two supposed varieties has been observed. The upland variety is alleged to produce wood that is better suited for wharf building.*

The matter of geography has also entered the problem. Charles F. Jenkins reported a conversation with Clifford Lewis of Philadelphia, Pennsylvania. Mr. Lewis stated that when a younger man in charge of construction for the New York Central Railroad, he always ordered *Pennsylvania* hemlock, judging it better with more strength and lasting qualities than the nearby *Adirondack* hemlock. Mr. Lewis admitted he did not know any reason why Pennsylvania hemlock should be better than Adirondack hemlock.

Why the distinction, *red* and *white* hemlock? This may best be answered by quoting an old-time logging boss in Endeavor, Pennsylvania. The information has been transmitted by W. P. Wheeler of Wheeler and Dusenbury, Endeavor, Pennsylvania. This logging boss admitted he could not tell the difference from the outside but added, "When you peel a white hemlock the flesh of the bark is white and the sap light colored while the flesh of the bark on a red hemlock is red and the sap seems to be redder in color, but after they dry off you can't tell the difference." It might be added that the heart wood of *white* hemlock is comparatively white while that of *red* hemlock has a distinct reddish tinge.

White hemlock is considered superior to *red* hemlock. This is suggested in the report from Nova Scotia that *white* or upland hemlock is better suited for wharf building. John Navel, a former raftsman known to Colonel Shoemaker, told the latter, "We used to raft white hemlocks just the same as white pine, the red hemlocks were too coarse to warrant handling that way." All woodsmen who recognize the two varieties appear to be in perfect agreement on this point.

A perfectly logical question arises, that is if there are two different varieties of Eastern hemlock, one superior to the other, certainly only the superior one should be used in reforestation. This question has given some concern to foresters, particularly since they have become so conscious of the importance of seed selection with Douglas fir, Scotch pine and a few other trees.

To review the evidence, many woodsmen have distinguished *red* and *white* hemlock on the basis of various characters. The color of the wood has been correlated with external appearance as follows: *Red* hemlocks with broad irregular crowns and bark in heavy plates, *white* hemlocks with small regular heads and smooth black bark. The two kinds have also been associated with differences in level, *red* hemlocks growing in the lowlands and *white* hemlocks growing on the uplands. Also *white* hemlock lumber has been considered superior in quality to *red* hemlock lumber.

But are there actually two varieties or has that impression been given by other factors: Sudworth in his Checklist of the Forest Trees of the United States, has listed *red* and *white* hemlock among other common names used by lumbermen. H. H. Gibson in American Forest Trees stated that "lumbermen recognize two varieties, *red* and *white,* but botanists do not recognize them." This is essentially true, no botanist has made this distinction. Moreover, extensive correspondence with trained foresters and wood technologists has furnished no evidence of the actual existence of two varieties of Eastern hemlock.

Two well-known authorities have explained their conceptions of the situation clearly and concisely. E. Murray Bruner, Wisconsin forester has given his version as follows: "In the Lake States, so far as we know, in Pennsylvania, there is only one species of eastern hemlock. The crown of this tree may vary considerably from one location to another since it, like all other trees, is affected by its environment. In dense, fast growing young stands the crown of the hemlock probably does assume a "candlestick" form. In the overmature stands we have noted that the bark of many of the oldest trees has a "reddish" cast, and it is quite possible the wood has a high proportion of "red" colored heartwood. On the other hand, young hemlock trees do have a "whitish"tinge to the bark and have

(Continued on page 11)

---

* *Letters from C. Heimburger, Forester of Canada Department of Mines and Resources.*

A Price Tag on Street Trees

By EDWARD A. CONNELL
Tree Warden, Stamford, Conn.

Let us look frankly at the very important field of street tree management. First, as a cold-blooded practical dollars-and-cents proposition. There is no doubt in my mind but that American municipalities are reaching a stage of embarrassed maturity insofar as street trees are concerned.

The American municipality has paid the penalty for abnormal material expansion in the needless destruction of and injury to, countless valuable street trees. I do not feel that it is necessary for me to give in repetitious detail the sorry tale of urban wastage of shade tree resources neither will I be impractical and ultra-visionary to the extent that I will hold that techniques and methods could have been worked out a quarter of a century ago which would have resulted in broad highways and untouched street trees. But, at any rate, overhead telephone, telegraph, and electric wires took precedence, sewer and water pipes, electric conduits, and gas mains (with their damaging leakage) had to be laid so roots were hacked off, crowns butchered, soils depleted and grades changed. Feeding rootlets which were left were then given the finishing touch when air and water-tight macadam and cement streets and sidewalks were laid as a perfect seal to stifle America's street trees.

I think it is well for the arborist and the landscape architect to bear in mind the scientific impact of the automobile on natural beauty at the turn of the century—an impact which has not only resulted in the widespread destruction of street trees but which has wrought changes throughout our entire social and economic life. The automobile brought the consolidated school, the super-market, the drive-in movie, the roadside hot dog stand to say nothing of courses in combustion engineering in many of our collegest and universities so is it not to be expected that growing things should be radically affected?

THE TIDE CHANGES

It is quite obvious that a reaction is now setting in. Urban America is,—to lapse into American "slanguage"—"fed up" with much of its high-pressure cement-brick-steel and carbon monoxide living. Urban America is no longer content to seek its cholorophyll and leaf-greens after a fifteen or twenty mile drive into the country. Let me cite several examples which, to me, indicate that once again America's trees and green things are regaining their rightful importance as front-page news.

At the Fifteenth National Shade Tree Conference in New York City, Mayor LaGuardia told of the plans of the Park Department to re-plant Sixth Avenue with shade trees just as soon as the new subway project is completed. Many of you are familiar with the story of Radio City's famous elms, brought to Fifth Avenue by John D. Rockefeller for the aesthetic and spiritual solace of urban-weary New Yorkers. And, more recently, the dramatic story of the English elms and Schwedler Norway maples brought to St. Patrick's Cathedral site as the gift of Major Edward Bowes, a great lover of trees. During the preliminary discussions concerning this gift of Major Bowes, the 84-year-old Cathdral vicar, Monsignor Michael J. Lavelle, represented the Archdiocesan authorities. It was he who was largely responsible for the happy selection of the specimens. He followed every development and at about the time word was sent that the tree moving equipment was ready to undertake the delicate project, the venerable Monsignor fell ill. It has been said that during his last fitful hours, this fine old-fashioned minister of God inquired repeatedly about his trees. He passed away and New York—Catholic, Protestant, and Jew—mourned his passing. Those in charge of the tree moving consulted the Archbishop of New York. The Archbishop, it was reported in the New York World Telegram, replied "go ahead with this work. I know how the Monsignor felt about his trees. He would be the first to veto any delay in the work." Under floodlights through the night, as the body of the saintly Monsignor lay clothed in purple and white and long wax candles flickered in the vaulted gloom of the cathedral, God's great green plants were being planted outside—the beautiful climax of tribute to the man who helped bring natural beauty back to Fifth Avenue.

I have been writing in this rather impractical vein for a very practical reason. I am not a scientist. I am not an authority on mychorizas, *Graphium ulmi*, or the life cycle of *Scolytus multistriatus*. Neither am I quite sure that iron or zinc injections—in dry or liquid form—are the answer to chlorosis of street trees. Of necessity, I must have the general practitioner's familiarity with shade tree insect and disease symptoms, effects, and control. But my experience in what might be called "interpretive horticulture"—writing for a dozen horticultural publications, serializing the story of Dutch Elm disease for Associated Press and United Press, writing and editing the three-year series of "Radio Tree Talks" for the National Broadcasting Company,—all these have given me a peculiarly good vantage point.

I can see the great need for landscape interpreters, landscape spokesmen, landscape dramatists,—if you will. Far be it from me to lapse into the trite,—to say that we who have had the Massachusetts State College landscape architectural training—should do some nebulous, "broadening out;" should become part-architect, part-poet, part-engineer, part-journalist. I am strictly against any vague "broadening" which is really a thinning out of abilities and skill. But I do say this and I hope I speak with some logic. What ARE we interested in,—we who have landscape background and experience? Primarily, we should be interested in a keener general appreciation of natural beauty and of landscape design, because such an appreciation is a worthwhile end in itself. One of the greatest needs—and I do not say THE greatest need—of our modern mechanized civilization is "more hands in the soil;" more understanding of the slow, patient growth of a maple, more vital appreciation of the restful beauty of good landscape design. We need not become advocates of a new Pantheism of nature-worship—that is the other extreme from crass ignorance of natural beauty—but we can or should interpret what we know more fluently than we have in the past. Secondly, (and now I pay tribute to human nature), such an increased appreciation helps you in a material way. It increases the public demand for your skill, it will give you larger opportunities to put your training and artistry to work.

To be specific—let me refer again to the transplanting of trees to Fifth Avenue. It is not difficult to see that some obscure horticultural scientist in a far western agricultural experiment station will be enabled to explore new fields of horticultural research because some state legislator happened to read new drama in the story of the Radio City elms. It is not difficult to see that some

(Continued on page 16)

The Soil Factor in Diagnosis

By A. Robert Thompson
Forester, National Park Service
Washington, D. C.

Although soil treatment is perhaps one of the most important phases of arboriculture, I am sure that it receives considerably less attention than many others and certainly less than it deserves. This is perhaps only natural since it is difficult to study the root systems and soil requirements of trees. If we are really to know our jobs, however, we must "go underground" more frequently than we have in the past, not only to improve our basic knowledge of trees and what makes them "tick" but for our diagnoses of abnormalities and diseases. Too often, I am afraid, we are tempted to treat superficial symptoms when the basic cause of a tree malady may be more deep-seated. True correction or cure of diseases—particularly those of environmental or nonparasitic origin—may be anticipated only when the underlying causes are understood and eliminated or rectified.

We are gradually learning more about the soil and the relation of its constituent elements to tree growth and as we do so we are beginning to find the causes of some of the tree ailments that have baffled us.

The older textbooks on agricultural chemistry list 10 elements as essential to plant growth. Of the group, carbon, hydrogen, and oxygen come from the air and water, whereas phosphorus, sulphur, nitrogen, potassium, calcium, iron, and magnesium are obtained by the plant from the soil. Modern science is recognizing others, including manganese, copper, zinc, and boron, as essential to balanced growth, and scientists are beginning to recognize several deficiency diseases where such elements are lacking or are nonavailable to the plant.

A typical disease that might be classed in this category is chlorosis—a common term applied to a condition where there is an inadequate development of chlorophyll in the leaves of plants. It varies in intensity and pattern and should be considered a symptom of a physiological disorder in the plant.

Numerous investigators have associated chlorosis with various chemical deficiencies in the part of the plant affected but not necessarily in the rest of the plant or in the soil in which it is growing. Apparently some condition prevails that prevents plants from utilizing the deficient chemical in the part affected. Deficient elements studied have included iron, manganese, magnesium, copper, and zinc, although iron deficiencies associated with an excess of lime in the soil are most prevalent.

Treatment has varied considerably. It includes the spraying of foliage with iron sulfate and manganese sulfate solutions as suggested by Kreag (4), (5), Dickey and Reuther (3), the injection of dry salts and their solutions into the trunks of trees as recommended by Bennett (1), and Pirone (6), and soil treatment with iron sulfate, sulphur, and complete fertilizers either applied in crowbar holes or in trenches. Although all of the above have been successful in one or more instances, none has been uniformly successful.

The treatment that seems to be most generally applicable to shade trees with least injury to the tree and with most lasting results is that recommended by Chadwick (2), in which a mixture composed of equal parts of ferrous sulfate and sulphur is placed in the soil around the tree at the rate of one pound of the mixture per inch of trunk diameter. Supplemental feeding with a complete fertilizer is also advocated. Pirone (6) suggests that a quicker response may be obtained by substituting aluminum sulfate for one-half of the sulphur; thus the mixture would be 25 per cent aluminum sulfate, 25 per cent sulphur, and 50 per cent ferrous sulfate.

If we are to grow shade trees successfully one of the growth factors we must consider is proper aeration of the soil. Dr. Gager of the Brooklyn Botanic Garden lists air among the four basic requirements of roots, the others being sufficient space and an adequate supply of food and water.

Under natural forest conditions nature replenishes the soil oxygen used for root respiration and that used to oxidize the harmful toxic acids and aldehydes frequently found in the soil. Under conditions of poor aeration in heavy soils, such as those found surrounding many street trees and some lawn trees, the slowly circulating air becomes charged with carbonic acid gas and is impoverished in oxygen, and the roots, under the influence of this gas, are killed by asphyxiation or become the prey of anaerobes found in large numbers in the soil.

Unfortunately, many shade trees are found under abnormal conditions that in varying degrees prevent the natural processes from renewing the oxygen absorbed by the roots and soil bacteria, or the diffusion of the carbon dioxide formed in respiration. This lack of proper aeration may be evidenced by the wilting of leaves, pale foliage, and poor growth.

By the use of air drills and the application of compressed air, it is now practical to aerate tree roots and correct the harmful conditions and diseases brought about by lack of aeration. To overcome adverse soil conditions further it is advantageous to blow fertilizers into the soil after aerating. In this way corrective nutrients are placed where they are most readily available to aid the recovery of tree health. Aeration through the use of compressed air is not a cure-all but when properly used—augmented by suitable drainage when necessary—it is a highly effective means of overcoming soil-oxygen deficiency.

The damage wrought by construction work, although well known to arborists, will warrant a brief review since so much of its is preventable. We are all familiar with the cutting of roots for the laying of sewer trenches, the building of sidewalks, drives, and streets, and the excavations for cellars but less fully realized, perhaps, is the serious root damage caused by the heavy trucks which usually have free rein at the construction site. The damage caused through compacting and puddling the soil about trees near buildings under construction is as serious as it is unnecessary. In a case of this kind that came to my attention recently, nearly all roots had been killed in the upper foot of soil beneath a veteran oak of great importance. A little forethought and intelligent supervision will prevent the driving of trucks and the piling of excavated soil and building materials over root systems. After such damage has been done, it is often necessary to loosen the soil thoroughly through surface cultivation and subsoil aeration as well as to improve nutrient conditions through fertilization and watering.

BIBLIOGRAPHY

1. Bennett, J. P. The treatment of lime-induced chlorosis with iron salts. 1931. Berkeley. California Agricultural Experiment Station. Circular 321.
2. Chadwick, L. C. Chlorosis of pin oaks. 1936. Proceedings of American Society of Horticultural Science. Vol. 33, p. 669-673.
3. Dickey, R. D., and Reuther, Walter. Manganese sulfate as a corrective for a chlorosis of certain ornamental plants. 1938. Gainesville, Florida Agricultural Experiment Station. Bulletin 319.
4. Kreag, Keith L. Chlorosis of shade trees in Lansing, Mich., in 1938. 1939. Michigan Forest and Park Association. Mimeo.
5. Nature and control of shade tree chlorosis in Lansing, Mich., 1940. Proceedings National Shade Tree Conference. p. 32-40.
6. Pirone, P. P. Chlorosis of pin oaks and its control. 1940. In THE SHADE TREE. Vol. 13, No. 12.

Hemlock Story

(Continued from page 8)

a higher proportion of "white" colored sapwood.

"In all the above descriptions we feel that the differences are caused by age or differences of site or environment, and that they are not inherent in the tree itself. All hemlock trees would prabably have these characteristics at one time or another if they lived long enough."

G. W. I. Creighton, Provincial Forester of Nova Scotia and a taxonomist of some note has agreed with Mr. Bruner and has gone a few steps further as indicated by the following excerpt: "There is only one variety of hemlock in Nova Scotia, *Tsuga canadensis,* but among the older lumbermen old growth or overmature hemlock is commonly called red hemlock, while the younger growth is known as white hemlock.

"There is naturally considerable difference in appearance of old and young trees, the older trees having much thicker bark and flatter crowns. There is also considerable difference in the texture and appearance of the wood, while the wood of the older trees, consisting almost entirely of heart wood, has a distinct reddish tinge.

"In the old growth hemlock there is also considerable damage caused by ring shake, and it is difficult to drive old growth hemlock without cutting about eight feet off the butt . . .

"There is also considerable difference in the rate of growth and general appearance of hemlock growth on different sites, due to soil condition and exposure.

"All these local conditions have given rise to the idea among lumbermen that there are two varieties of hemlock, but, as already mentioned, these ideas are absolutely false."

As for the comparative quality of lumber produced in different parts of the country, H. P. Brown has reported that a graduate student at Syracuse University carried on an extensive testing program of hemlock and other woods from various parts of the country. The comparison of results was not at all significant. The Forest Products Laboratory in obtaining average strength values for Eastern hemlock, has tested wood samples from Wisconsin, New Hampshire and Tennessee. According to W. W. Weber, the results of the tests for the first two states were very close but the Tennessee material was of higher density and therefore showed greater strength properties. Generalizing the results of thousands of

(Continued on next page)

The Big Mexican Taxodium

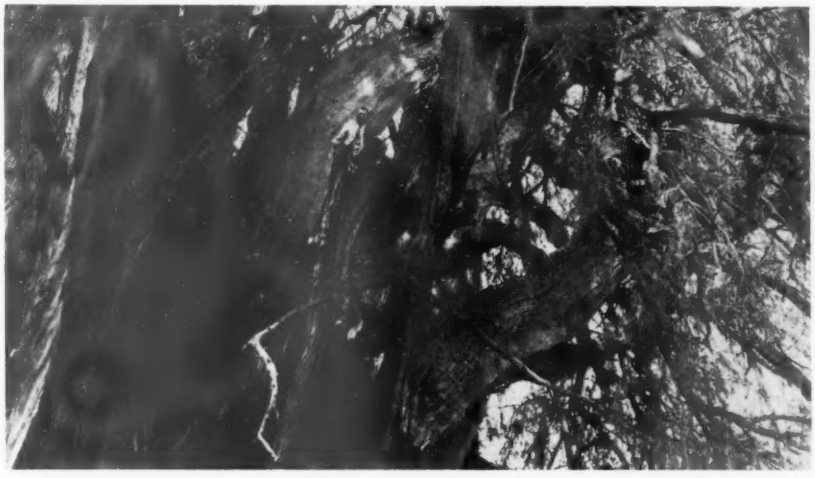
By F. C. Thomas
Greensboro, N. C.

On a recent trip into Old Mexico, the writer paid a visit to what is said to be the second oldest tree in the entire world, surpassed only by a Banyan tree growing in India, and feel that the pictures of this patriarch of the tree world, together with a few words of descriptive matter may be of interest to the readers of TREES.

This tree known in Mexico as Ahuehuete (*Taxodium mucronatum*) is located 1161 miles south of the Rio Grande in a church yard in the village of Santa Maria del Tule, in the State of Oaxaca, Mexico. It might be well to say at the start that this monstrosity must be seen to be appreciated. Nothing that can be said or written could begin to convey an accurate idea of the superlative qualities of this connecting link with days gone by, days that stretch back through the years to even before the birth of Christ.

This outstanding example of God's handiwork is indeed an awe inspiring sight, one that a tree lover could contemplate for hours at a time with unflagging interest. The Mexican department of Agriculture estimates its age in excess of 2000 years. Its tremendous trunk measuring 134 feet in circumference, four feet from the ground is about all that can

(Continued on page 15)



—Photos courtesy F. C. Thomas

In the upper photo the author does a little skinning in one of the world's largest trees. In the bottom picture Mrs. Thomas in the center, measuring the tree, is assisted by Senorita Gloria Topete and Senor Ramon Alvarez

Thornless Honeylocust

(Gleditsia triacanthos inermis)

L. C. CHADWICK, *Assoc., Prof. Hort.*
O. S. U., Columbus, Ohio

Gleditsia triacanthos, the Honeylocust, a native of the territory from Pennsylvania to Nebraska, Texas and Mississippi, is a large tree at maturity, becoming as much as one hundred and fifty feet high, with spreading branches forming a loose head. One of the largest trees on record is a specimen located in Dayton, Ohio, with a branch spread of about one hundred feet and trunk girth of about fifteen feet.

Thorns, simple or three-pronged, are produced abundantly on the trunk and main limbs of the species. These modified branches, while a protection to the tree, are dangerous when the tree is used in situations where children at play may come in contact with them. They are, however, somewhat ornamental, being first green in color, then red and finally at maturity a chestnut brown color. Because of the possible injury from the thorns and because the variety is easier to handle, the Thornless Honeylocust, *Gleditsia triacanthos inermis,* is more often grown in nurseries.

One of the most beautiful features of the common and Thornless Honeylocusts is the dainty, feathery foliage. The leaves are alternate, compound or twice compound and each leaf is composed of 20 to 30 small leaflets about an inch long. The foliage is so fine and well spaced that the tree casts a light shade.

Trunk of Thornless honeylocust showing surface free of thorns that make the species so dangerous

There is no trouble of growing grass beneath the Honeylocust.

The leaves are late in appearing in the spring and among the first to drop in the fall. They turn an attractive clear yellow color before dropping but trees are often quite destitute of foliage before other trees show much fall coloration.

The white to greenish flowers are nearly inconspicuous among the leaves but the fruits, often hanging in clusters, are flat, brown twisted pods, twelve to fifteen inches in length and may remain attached to the plant until after Christmas. The pods and the shiny brown seeds therein may be ground for livestock feed.

The Honeylocust prefers moist, fertile soil of river bottoms but it will grow in almost any situation except in thick woods where light is a limiting factor. It is a rapid grower in good soil, easily transplanted and relatively free from injurious insects and diseases. Leaf spot and witches-broom are troublesome in some sections. The pods drop during the winter and may be objectionable on lawns.

Propagation of the species is usually accomplished by seeds which are decidedly hard. Hot water or acid treatment is advisable before planting. The Thornless Honeylocust is propagated by grafting on seedlings of the species.

The Thornless Honeylocust is considered one of the best ornamental trees. Its thornless character, slender branches and loose habit make it an attractive and desirable lawn tree. While objection may be raised to the fruit pods, little attention needs to be paid to the leaves since they curl and dry and become almost unnoticeable. The Thornless Honeylocust has also proved satisfactory as a street tree and for hedge purposes. The wood is very durable and may be used for fence posts and railroad ties.

Hemlock Story

(Continued from page 11)

tests at the Laboratory, Mr. Weber stated that "Geography in itself is a poor index to growth conditions, and consequently we are inclined to minimize the importance or reliability of adhering to state or regional distinctions." He then quoted the notable exception of Douglas fir, that is, the Inland Empire firs have characters that are superior to the Coastal firs.

All this suggests the obvious conclusion that there are no forest or geographical varieties of *Tsuga canadensis.* All supposed differences in habit and character of wood are probably due to differences in age, soil, site, exposure and other external conditions.

But this conclusion will probably be refuted as long as some of the older woodsmen of today are still living. In a recent letter, Henry W. Shoemaker has criticized the above conclusion as follows: " . . . I do not think that the white hemlocks were older than the red hemlocks in adjoining forests, in fact my guess would be that on an average the red hemlocks in the big forests at the head of what was called the War Path were at least a hundred years older than the whites which grew along the stream . . . As to prime maturity, I think the red hemlocks at the War Path were past their prime, whereas, the white hemlocks were in a beautiful state of growth and development.

"Once a variety has disappeared one is at a great disadvantage in proving one's points but I have the testimony of hundreds of old Pennsylvania woodsmen that two varieties existed." Thus, the *red* and *white* hemlock controversy continues.

Heat Injury

(Continued from page 6)

species were quite badly injured. At the time the injury occurred the maximum temperatures at Red Bluff ranged from 1 to 3 degreese higher than at Redding. (DIVISION OF FOREST PATHOLOGY, BUREAU OF PLANT INDUSTRY, COOPERATING WITH U. S. FOREST SERVICE, SAN FRANCISCO, CALIFORNIA). —*Plant Disease Reporter.*

Forester — Arborist

Excerpt from "Shade Tree Diseases" by Rush P. Marshall, JOURNAL OF FORESTRY,, 35: 409-411, 1937.

Pure scientific research in tree pathology is more or less equally valuable to both the forester and to the tree expert. The same premise must hold true for scientific investigations in related fields. Here the similarity ends. The practical application of information gained is not the same for the forester and the tree expert.

There is a broad difference in the practical application of scientific data by these two groups. More than in anything else this difference is built on the cash and intrinsic value of the individual tree. Where the intrinsic value of the individual tree is nil or the cash value measured in but a few dollars, or even in cents, the same methods of treatment that would be warranted for a tree whose aesthetic or intrinsic worth is high, or whose historic value is held to be priceless, are not applicable.

This means that the shade tree expert is often justified in expending large sums on disease control by spraying, sanitation, fertilizing, thorough pruning, the removal of girdling roots, bracing and cabling, and a reasonable amount of cavity treatment. Let me digress here to ask that you do not think of cavity treatment as constituting the principle present activity of the tree expert. It is a highly important and technically difficult part of his task, which now represents less than 5% of his total volume of business.

The necessity for controlling forest diseases with the smallest possible expenditure presents one of the most difficult problems in the entire field of applied pathology. The forester has shown rare ingenuity and resourcefulness in meeting this problem. He has largely accomplished it in the past by his skillful application of simple forms of sanitation. Now he proposes to augment sanitation with two newly forged tools, timed silvicultural procedures and disease-resistant trees.

Another fundamental difference between forestry and shade tree care arises from the fact that the tree expert must be guided by the wishes of his client. The forester goes forward in accordance with a definite plan which he, or his superior, or some other trained worker has carefully thought out. Regardless of how well the tree expert may plan, execution is subject to the whims of the client.

I believe that the forester has already so well educated his public that dollars have ceased to wholly represent worth of forests. I believe that in New England at least, the comprehensive value of the trees so far exceeds their timber value that we are not at a loss to find a satisfactory additional yardstick to supplement measurement in board feet of lumber.

I believe that we shall need much more research in fields of tree pathology. More than that, there will be an increased demand for the practical application of such scientific data to fight tree diseases. For the forester most of the practical application will continue along lines of sanitation and timely silviculture. In a less degree, the increased comprehensive value of his trees may force him to fight diseases with methods somewhat similar to those now used by the tree expert to check shade-tree troubles, e.g., extensive dusting from planes, the planting of soil conditioning crops prior to setting out young trees, or the application of commercial fertilizers to forest trees.

An ever increasing tide of visitors sweeps our forests annually. It brings with it new demands and new problems. Even now injury from tourists is a serious factor in some regions. With the entry of the Forest Service and its agencies into park and recreational activities a few of the trees now in the foresters' charge rightfully deserve the designation "shade trees." The responsibilities which are assumed in their care as such will include among other obligations the more intensive treatment of their diseases. Surely such changes lead toward better mutual understanding between foresters and tree experts and toward the goal for which both are striving—the preservation of a priceless public heritage.

We have a Splendid Stock of Street and Ornamental

TREES

Also a Complete Line of General Nursery Material For Park and Landscaping Uses

Let Us Know Your Needs

Write Ray Hartman, Pres.

Leonard-Coates Nurseries
2201 The Alameda San Jose, Calif.

Solve Difficult Spray Problems With D-X

D-X is the most powerful weapon used by public sprayers against insects hard-to-kill. Japanese beetles, leaf roller, codling moth, tent caterpillar, canker worm, leaf hopper, aphis, mosquitoes, etc.

D-X is now available in two formulas—D-X pyrethrum, and D-X nicotine and pyrethrum, the first time these two toxic ingredients have been successfully combined. Ever clean up aphis 100% on copper beech? That's a job for D-X nicotine.

At the National Shade Tree Conference in Chicago talk to Mr. Shafer in Booth 26 about your use of D-X.

B. G. PRATT CO. **MANUFACTURING CHEMISTS**
50 Church Street, New York, N. Y.
Manufacturers of SCALECIDE, SPRA-CREAM, SUMMER SPRA-CREAM, etc.

Tree Surgery Equipment

A complete stock of Tools, Materials and Supplies for Pruning, Cabling, Bolting, Bracing, Cavity Work, Feeding, Lightning Protection and all phases of Tree Treating.

HARDIE SPRAYERS . . . CHIPMAN SPRAY MATERIALS
DORMANT OILS . . . POWER SAWS . . . SOIL TEST OUTFITS
ELECTRIC AND PNEUMATIC EQUIPMENT . . . BOOKS, ETC.

We service and overhaul Sprayers and handle Used Equipment and Parts

Write for complete Catalog and Monthly "Chips"

H. E. Muench

Main Office and Factory
STAMFORD, CONN.

More Upright Trees

Interest in fastigate forms of trees continues and the latest contributions consist of two fine specimens of Sugar Maple. One is located in New Hampshire and comes from Warren F. Hale, Assistant State Forester of that Sate; the other tree is located in New Jersey and is described by John Swartley formerly on the staff at Ohio State.

Both trees, as can be noted, have great potential value in street, park and ornamental use, and it is hoped that some enterprising nurserymen will avail themselves of a supply of the wood from both trees for propagation.

Mr. Hale sent in one picture of the New Hampshire tree about a year and a half ago, then followed up with the dormant picture—he describes the tree and its location as follows:

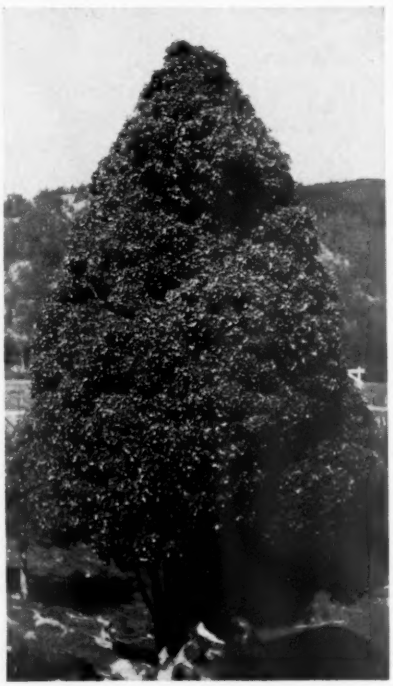
"In the last October issue (Vol. 3, No. 4) of TREES I was much interested in a picture of a Sugar Maple which is located in front of the Conservatory in Highland Park, Rochester, New York. I thought that you might be interested in the enclosed print showing another Sugar Maple (Acer saccharum) which is growing on a farm owned by a Mr. Cox near the village of North Woodstock, N. H. I have seen this tree many times and have talked with Mr. Cox about this unusual specimen. Mr. Cox informed me that the Maple was never trimmed and is growing in the shape of an ice cream cone. He cannot account for its unusual characteristics.

"This sugar maple is located on the farm of Irving E. Cox located about a mile south of North Woodstock Village in New Hampshire. The sugar maple has been estimated to be about 75 years old and is growing out of a group of rocks at the base of a slope on which a stand of white pine is growing. This tree is considered a freak of nature and is sterile as no blossoms or flowers have ever been seen. The unusual shape of the tree is natural and has never been trimmed to the knowledge of Mr. Cox. A careful examination indicates that this statement is correct."

Mr. Swartley, regarding his splendid contribution says:

"This fastigiate maple, about 40 feet high, is located on the Adams Estate, near the coast of central New Jersey. The estate is due east of Rumson, a distance of only a mile. The habit and general appearance are admirable, being intermediate between the type specimens of *Acer saccharum monumentale* and *A. saccharum columnare* as illustrated in March-April issue, 1942, of TREES. It is not often that one is able to obtain two notable specimens in one photograph, therefore it is particularly interesting to note the broad shape of another variety of *A. saccharum* in the background. It is one of four such trees planted in a row. This type could probably be called *A. saccharum columnare*. This tree would undoubtedly be classified as *A. saccharum monumentale* but is most probably a distinct clone of that variety. If anyone desires cions for next winter's propagation, I would suggest writing to the proprietor of Wittenberg Nurseries, Long Branch, New Jersey. Mr. Wittenberg called my attention to the Adams Estate four years ago, when the photo was taken.

Cone shaped Sugar Maple in dormant stage showing density of branch structure.



—*Photos courtesy Warren F. Hale*

The North Woodstock Maple in full foliage. Note the compactness and the regularity of its outline

—*Photo courtesy John C. Swartley*

The New Jersey Maple referred to by Mr. Swartley and in the left background the other variety he describes

Unfortunately, at the time that I observed the specimen in New Jersey, I did not attempt to obtain full information about the exact origin. However, the person who developed the estate, a Mr. Adams, I believe, is no longer living, and the present owner, a Mr. White, either is not interested in the plantings or does not have the money to keep them up. I was not able to see him personally

(Continued on next page)

SHADE TREES need SPRAYING

● PROTECT your shade trees from Scale, Mealybugs, Red Spiders and the eggs of certain other insects with ARBOROL Shade Tree Spray. "ARBOROL" is also a carrier for fungicides and other insecticides. Write for free folder..."Shade Tree Pest Control with 'ARBOROL'".

CALIFORNIA SPRAY-CHEMICAL CORPORATION
"The ORTHO Company"

Richmond Fresno Lindsay Sacramento
San Jose Watsonville Whittier
Anaheim Pomona
Yakima and Wenatchee, Wash.
Elizabeth, N. J. Portland, Ore.
Orlando, Fla.

Upright Trees

but doubt very much whether he has any information regarding the tree.

I hope that this note will add to the interesting story of trees of narrow habit. If grafted stock would assume the same habit, it would be a valuable tree for narrow city streets."

Any additional information readers may have regarding this form of tree we will be happy to have it for publication. We feel that this type of tree, except for the discredited Lombardy Poplar, has not been exploited to the extent that its usefulness demands.

ODDITREES NEEDED

We have run out of candidates for the "ODDITREES" department, and wonder if some of you readers do not have pictures of a freakish or unusual tree in your neck of the woods. If you know of an odd tree send us a picture with all the data available on the specimen. Thanks.

South Carolina Can Grow Cork Oak Trees

The State Forest Service has just received copies of a report showing the potential cork oak growing possibilities in the United States. The publication contains a map showing that the southern part of South Carolina ranks well up among leading sections of the country suitable for growing this tree and that the Piedmont section and the North Coastal section of South Carolina are not far behind.

Mr. Giles B. Cook of the Research Department, Cork and Seal Company of Baltimore, Maryland, sent these publications to the State Forester. Mr. Cook said, "We are glad to know of your interest in growing cork oak in South Carolina and from our observation your State appears to be one of the best in the South to grow cork oaks. Incidentally, there are more large cork oak trees existing in South Carolina than in any other section of the South or East."

South Carolina cork oak trees are found growing in Columbia, Society Hill, Aiken, near the town of Edgefield and in several other places. Cork is one of the critical war materials and is also much used in time of peace for stoppers, bottle caps, bookcovers, footwear, automotive gaskets and great numbers of other things.

The State Forest Service is experimenting with planting of cork oak acorns and seedlings and just recently District forester George E. Smith, jr. of Aiken succeeded in growing forty-eight cork oak seedlings in a window box in his office. He sent half of them to the State Forest Nursery at Sumter and the balance he set out in the vicinity of Aiken. Incidentally, the cork oak tree resembles our common liveoak very closely and makes a beautiful ornamental tree.

WE HAVE
TOOLS and SUPPLIES
FOR YOUR EVERY NEED
listed and described in our
BLUE BOOK
Write for your free copy today
●
American Florist Supply Co.
Importers and Distributors
1335 W. Randolph St. Chicago

SHADE TREES
♦ Insects and worms — destroyed vegetation — reduced leaf area — stunted growth—these are some of the problems of the shade tree grower. Get our illustrated booklet that describes the use of "Black Leaf 40" in eliminating certain insects on shade trees. Lists insects — gives dosage.
FREE BOOKLET—Write
4136
Black Leaf 40
TOBACCO BY-PRODUCTS & CHEMICAL CORP., INCORPORATED · · LOUISVILLE, KENTUCKY

Mexican Taxodium

(Continued from page 11)

be photographed to any advantage and the resulting pictures utterly fail to portray the tree's enormity with any satisfactory degree of accuracy.

At another point there is a crack or depression in the trunk some four to five feet deep and wide enough so that the writer squeezed through and made his way up into the tree in an effort to photograph the upper portions. In the center of the tree is a sort of crotch where two or three limbs of fantastic proportions grow out from the trunk, forming an enclosed area nearly as large as a small room.

In spite of the almost incredible dimensions of the trunk, the tree is not as tall as might be supposed, being approximately one hundred and thirty feet high. Several of its roots are partially above ground and are as large as barrels. Indeed this tremendous specimen of plant life is a shrine that will cause the nature lover to approach with awe inspired humility and is well worth an hour or two of anybody's time to go and look it over.

Keep Your Name Alive—Advertise in TREES

Price Tag on Trees

(Continued from page 9)

municipal shade tree appropriation will be raised from $3000 to $5000 after some Mayor or Councilman has pondered over the expenditure of many thousands of dollars by a shrewd Rockefeller to bring to Fifth Avenue what he has seen abused and neglected on Main Street in Middletown or Gopher Prairie.

I do not expect the landscape architect to become an architect but I do see the need for a better knowledge amongst us of the relation of plant forms to building design. Only recently I was discussing this matter with a well-known architect who was building a semi-functional horizontal style home in Stamford. He pointed out to me the fact that a great deal of the popular apathy towards this type of architecture was due to the failure of the landscape architect to lend his assistance. He showed me how the foliage growth of the pin oak lent itself to this style of architecture—its horizontal appearance or, as this architect put it, "first a layer of leaves then a layer of air"—as no pyramidal evergreen or globular maple would.

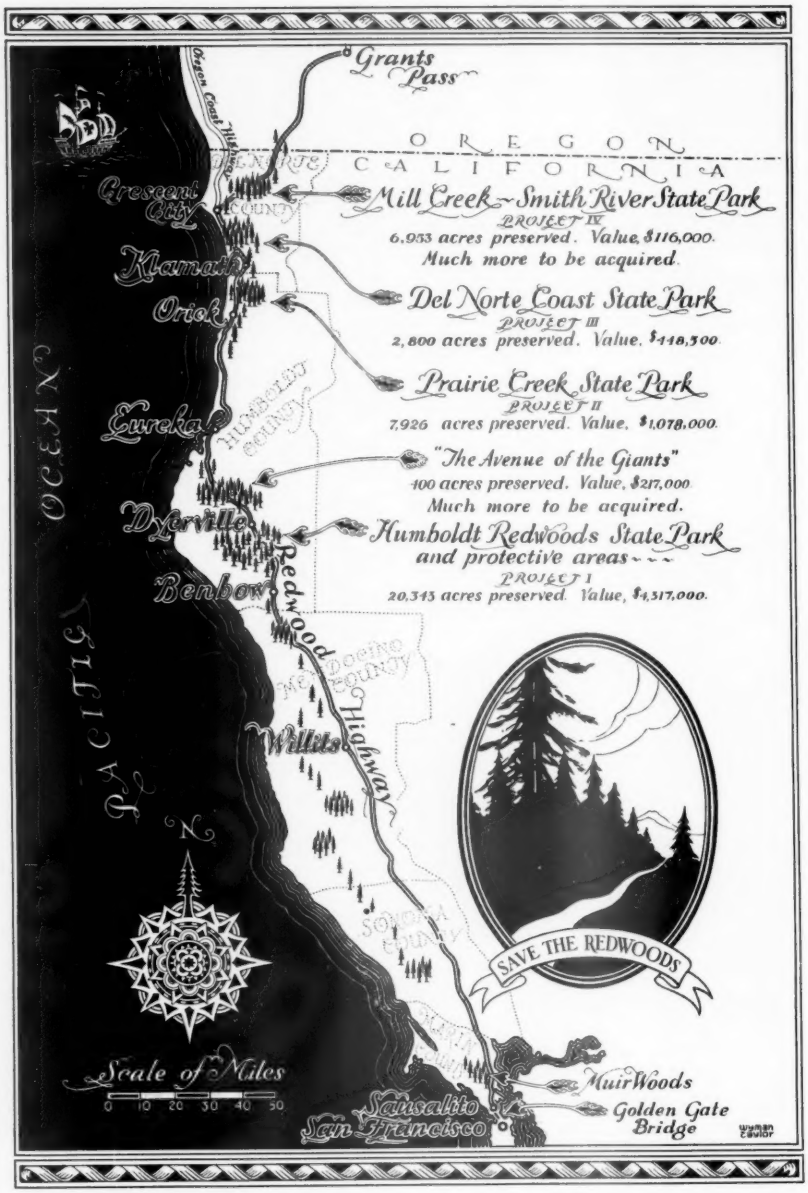
As an illustration that I have tried to practice what I am preaching and at the risk of repeating myself, may I call to your attention the several articles which I have written concerning the matter of street tree valuations. Without going into detail about the some six years of private research and statistical inquiry into this subject, may I cite the fact that I have been told—definitely and enthusiastically—that a newer appreciation of street trees has been evident wherever my suggestion to dramatize street tree values by literally hanging a "price tag" on them—has been followed. But to sum up—no municipality will worry much about "just another row of trees" but nine out of ten municipalities will be concerned where the destruction of "$5000 worth of maples, oaks, and elms," is involved.

As for street tree management, let me give you just a few important facts without burdening you with well-known scientific detail. First, there is a tremendous amount of work to be done in this field. There is yet no real literature on planting types. Most of us agree in the metropolitan New York area and Connecticut that Norway maple, pin oak, linden and perhaps Ginkgo, are the most desirable specimens for street use based on the factors of hardiness, symetry, immunity from insect and disease depredations, abundance of shade, cleanliness, and

(Continued on next page)

Trees...

Where To See Redwoods



This map serves admirably to show the locations of the various Redwood Groves that have been acquired in the past twenty years thru the tireless efforts of noble spirited men and women who in 1922 organized the Save-The-Redwoods League. This splendid organization has effected the preservation of over 38,000 acres of these incredible giants and the plans for the future envisage a continuous chain of Redwood parks from the Oregon border to the southernmost limits of the range of the species.

Nationwide interest in the Save-The-Redwoods movement, already great, is steadily growing. With members in every state in the Union, the League has a total of nearly 6500 members.

This movement is an all-American drive to preserve one of American's most priceless heritages and is deserving of your help, either thru membership or by donation. Write to the League's secretary at the University of California for some of the beautiful literature describing these wonders of the tree family.

(Continued from preceding page)

longevity. In Newark, New Jersey, where Mr. Carl Bannwart has set the standard for intelligent street tree management procedure, nearly half the street trees are Norway maples and this percentage, I understand, is being increased. But just as we become sure that we know what *are* the proper street trees we are set back by things like the statement of the famous Negro agricultural chemist, Dr. George Washington Carver of Tuskegee Institute, which appeared in the New York Herald Tribune recently to the effect that 50% of the oaks and maples planted along Grand Central Parkway in New York City will be dead in two years because of faulty selection. Dr. Carver's statement—which, incidentally, was given great prominence along with the news of the war—was, in part—"*much money has been needlessly wasted when a little judgment would have resulted in a happy horticultural arrangement. You can't put a tree or a plant in a happy horticultural arrangement. You can't put a tree or a plant where it doesn't belong and expect it to develop naturally any more than you can expect an Eskimo to live happily on the Equator or a Hottentot to be comfortable at the North Pole.*" I cite this statement to prove that we who are engaged in municipal shade tree management receive our setbacks just as we become convinced that we have solved the problem of street tree selection.

One of the pressing problems of street tree management insofar as I have been concerned has been the establishment of some workable system which will take care of spreading a limited appropriation over a wide area. During this past year, I established a three-phase policy. This was (1) emergency; (2) educational, and (3) reasonable upkeep. From September, 1938, immediately after the hurricane, to November, 1939, much of our work was of an emergency nature. Hundreds of trees were damaged and littered with broken tops, exposed roots, split crotches. We removed some 110 roadside trees—elms, oak, maple, locust, willow and a dozen other genera—during the past year—and arrangements were made through a WPA-sponsored project to replace these. Under "emergency" also, I might cite the terrific amount of work involved in a town where the WPA is conducting a wide-scale program of street widening and sidewalk construction. I have established a system whereby the WPA reports to me, far in advance of the inauguration of such projects, the location of existing trees which will be involved. Where possible we save these by changing the sidewalk line slightly or by using "pseudo-curb" to bridge the roots to avoid heavy cutting involved in the laying of regular curbing.

Under "educational" may I state that I have distributed widely facts and statistics concerning the value of shade trees; have worked out a "trouble shooting" plan with garden clubs by means of which dangeronu shade tree conditions will be reported to me; have laid the nucleus of a "town arboreum" and started a shade tree census project which will give a complete inventory of our roadside shade trees. Under "educational" also I might include attempts I have made to solve the always troublesome problem of overhead wire clearance Space will not permit any extensive discussion of this except to point out that it is a problem which can be solved by insisting that the utility companies spend as much time re-shaping roadside trees as they do opening holes for their wires.

Under "reasonable upkeep," phase No. 3 of this past year's program, may I mention bracing and cabling, scar treatment, root treatment and thinning out of roadside shade tree congestion. This year my plan calls for an emphasis on reasonable spraying, feeding, and some open cavity treatment. Inasmuch as the area under my charge is larger than New Haven, larger than New Britain and Waterbury put together—it is obvious that phase No. 4 of my program will be a feat of magic, making every ten dollars do the work of one hundred!

In closing may I emphasize a few facts. First, street trees or specimen trees on the home grounds are the DOMINATING element in the landscape composition especially on smaller properties because they occupy so much valuable space and in their mature form are larger than any other kind of plant material. Second, adequate care of street trees can be brought about by the arborist and landscape architect instilling the idea into the public mind that trees are worth dollars and cents. Third, because they are plants, trees, particularly street trees should be the scientific and artistic concern of this association. Fourth, whether we are engaged in shade tree management or landscape architecture—we should try to *Interpret* more colorfully and vividly—the materials with which we are working.

Paper read at Massachusetts State College Landscape Architects Ass'n.

PREVENT FOREST FIRES

Save-the-Redwoods

Send 10 cents each for these attractively illustrated pamphlets: "A Living Link in History," by John C. Merriam ... "Trees, Shrubs and Flowers of the Redwood Region," by Willis L. Jepson ... "The Story Told by a Fallen Redwood," by Emanuel Fritz ... "Redwoods of the Past," by Ralph W. Chaney. All four pamphlets free to new members—send $2 for annual membership (or $10 for contributing membership).

SAVE-THE-REDWOODS LEAGUE
250 Administration Building,
University of California, Berkeley, Calif.

KOPPERSOL

Is an Effective Fungicide Which Will Not Mar Foliage Nor Injure Tree Life

Can be used effectively through the entire growing season; ESPECIALLY RECOMMENDED FOR CONTROL OF BLIGHT AND OTHER FUNGUS DISEASES ON BOTH FRUIT AND SHADE TREES; FOR PEACH LEAF CURL; AND FOR FUNGUS BROWN PATCH AND DOLLAR SPOT ON LAWNS AND GOLF GREENS.

Destruxol Corporation, Ltd.
Pasadena, California
Write for address of your nearest dealer

HOW CAN YOU GO SAILING WITHOUT a BREEZE?

What kind of a **LAWN** *could you raise before solving these problems?*

You know that a lawn can be no better than the soil, that success depends upon soil's fertility, depth, drainage. You know that a lawn's care depends upon its locality. You know that the seed mixture must be adapted to your growing conditions. But, naturally, you cannot be expected to have the time and special equipment for studying these conditions. Don't let that worry you. Just find out what Woodruff's organization can do for you. Write today. No obligation.

Main Office
MILFORD, CONN.
F. H. WOODRUFF & SONS, INC.

Authors and Books

The following books may be ordered from TREES Magazine, Box 886, Santa Monica, California.

CEANOTHUS. Maunsell Van Rensselaer and Howard E. McMinn. Published by Santa Barbara Botanic Garden, Santa Barbara, Calif., 308 pp., illus. $2.65.

This very beautifully printed book includes the first key to all known species and varieties since 1897, according to the foreword.

Once again we have the pleasure of reading the story of how a certain species of plant found its way into the favor of man. Very interestingly written. The data on use and range is of extreme value to anyone working with plants.

The second part, a description of the Genus by Dr. McMinn, is principally for the botanist but is indispensable for field work.

A valuable work of which the authors can well be proud.

AMERICAN PLANNING AND CIVIC ANNUAL. Edited by Harlean James. American Planning and Civic Association, 901 Union Trust Bldg., Washington, D. C., 292 pp., $3.00.

The papers that comprise this book are a compilation from various planning conferences held during 1941.

There is valuable information pertaining to modern city and park planning in this book, but a notable omission is the absolute absence of any reference to the important place and proper use of trees in the city of the future.

The tremendous problem of handling the ever-increasing automobile traffic is ably discussed in several papers.

Priorities

(Continued from page 7)

erence Rating is required. This can be obtained in standard form from most office supply companies.

If you are performing services for public utilities, U. S. Government, State or Municipal Highways, educational institutions or others entitled to a Preference Rating, protect your own interests by having a rating applied to your work, so that you may in turn extend it to obtain materials.

In cases of emergency work, such as repairing tree damage which impairs public safety, arborists are entitled to a Preference Rating to enable them to secure or to replace the materials used in accomplishing the work, but this must be applied for on form PD-1A, stating the exact material required, their cost, and explaining the urgent nature of the work. These forms are obtainable from Regional Offices of the War Production Board, and must be submitted to Washington for action. It usually takes two to three weeks to get a reply.

At present such items as pruning saws, long pole pruners, pole saws, tree paint, tree rod, and many other supplies may be obtained with an A-10 rating. This condition is bound to change as present stocks are decreased. Buy what you need with what Preference Ratings you can get. Do not buy ahead of immediate needs. Preserve what you have, ration what you receive, and wherever possible, substitute a non-critical material. Don't be disappointed in your suppliers if they cannot give you all the material you want. Manufacturers have been required to do a tremendous amount of paper work in order to keep material flowing into their plants. They feel that their customers should co-operate to the fullest possible degree by taking the trouble to apply for Preference Ratings where they believe their situation warrants priority assistance.

One subject which has not received proper consideration to date is that of the essential nature of tools and equipment for the care of productive trees. Orchardists who produce commercially should be as much entitled to the right to buy necessary equipment as a producer of manufactured items, since food products are certainly a prime essential in any war economy. Likewise, the arborist who does trimming and spraying for commercial growers ought to be given a Preference Rating to obtain necessary tools and equipment.

This should also apply to forestry work in fire prevention and forest conservation, in view of the obvious necessity of protecting our forests from fire, and at the same time conserving timber resources. As an example of the part forest products are playing in war production, recently a freezing order was placed on airplane spruce lumber in order to assure an adequate supply for aircraft construction.

The National Shade Tree Conference, while primarily concerned with shade trees, as its name indicates, nevertheless is interested in conservation and the commercial utilization of forest products. If this organization could use its influence in securing some measure of priority assistance for the profession it represents in its essential war-time functions; line-clearing, public safety, commercial orchard work, forest preservation and conservation, it would be not only helpful to its members and to all others in their field, but it would also be making a distinct contribution to the War effort.

GET A NEW MEMBER

PINE-LEAF SCALE

A timely suggestion regarding pine-leaf scale by H. K. Henry is contained in "Notes on Forest Investigations" from the Conservation Department, as follows:

"The pine-leaf scale (*Chionaspis pinifoliae*Q is a native insect found throughout the United States wherever its host species occurs. It attacks most species of pine and spruce, some firs and even hemlock, but in this region rarely shows heavy infestation on other than Scotch and Austrian pine or, infrequently, Red Pine. Ornamental conifers, especially Mugo Pine, also are frequently attacked.

"The factors which promote heavy infestations appear to be those which cause lack of vigor in the host. Unfavorable site, mechanical injury, other insect or fungus attack, and covering with dust all encourage increase of the pine-leaf scale. At Tomhannock, mechanical injury and dust have been the most important in building up the intensity of attack.

"For the past five years road construction has been carried on in widening the dirt road along the east side of the reservoir (Tomhannock Reservoir in Rensselaer County). This road is directly adjacent to a number of the plantings with the result that the widening has exposed and injured the roots of some trees and raised the soil level about the trunks of others. All such trees, Scotch, Austrian or even White Pine, are heavily infested, presenting a yellow or whitened sickly appearance. The needles are almost covered, crowding being so great that the scales overlap.

"During the construction work and subsequently from passing motor vehicles the pines adjacent to the road have received great quantities of dust. These dustladen trees are the most heavily infested on the watershed, the degree of infestation varying directly with the distance from the road and source of dust. The response of the insect to dust-laden needles is so definite that a difference can be observed between the trees on opposite sides of the road, the pines on the side from which the prevailing winds blow being in better condition than the others. The recognition of the importance of dust in increasing infestation has an important bearing on the spray to be used on conifers. Entomologists have found that the non-toxic residues and stickers left on the needles of pines after certain spraying operations intensify the attack of the pineleaf scale. Therefore in spraying conifers subject to attack by this insect it is important to use a spray with a minimum of solid residue."

New York Nursery Notes.

FANNO SAWS Are Tough

In this day of priorities and steel shortages it is important that the tools you buy be made of materials that will give the utmost in service and the maximum in lasting quality—**FANNO** saws give you these two essentials in pruning saws because . . .

Fanno SAWS ARE Tough

Write for Circular

The FANNO SAW WORKS

1805 MAGNOLIA AVENUE CHICO, CALIFORNIA

TRANSPLANTONE

MAKES ROOTS GROW FASTER AND REDUCES LEAF LOSS

TRANSPLANTONE treatment will enable this pine tree to continue uninterrupted growth after being moved.

While TRANSPLANTONE solution usually increases root development on all trees, evergreens or deciduous, it is especially effective on azalea, juniper, rhododendron, pine, hemlock, pyracantha, holly, pin oak and sweet gum. It is cheap insurance against replacement.

HOW TO USE

REG. U.S. PAT. OFF. TRANSPLANTONE

Dissolve 1 ounce of TRANSPLANTONE in 10 gallons of water. Apply to the root area of the tree after planting, using at least 1 gallon of solution for each inch of trunk diameter.

It pays to water holly, whether Japanese or otherwise, with TRANSPLANTONE solution immediately after moving.

3 oz. can $1.00 — 1 lb. can $4.00

Buy from your dealer or write to

American Chemical Paint Co.

Horticultural Division T-8 AMBLER, PA.

Section 562 P. L. and R.
U. S. POSTAGE
Paid
Santa Monica, Calif
Permit No. 158

Mobile, Speedy — Efficient Fire Protection, Too

Hardie motor truck mounted sprayers are available in a wide variety of styles with and without power take-off.

HARDIE *Dependable* **SPRAYERS**
"THE ONLY SPRAY PUMP THAT IS COMPLETELY LUBRICATED"

The thousands of High Pressure Hardie Sprayers spraying shade trees, parks, golf courses, shrubs and nurseries in municipal and public works service constitute always—ready, powerfully efficient fire-fighting units in time of need. They also are widely used in mosquito and weed control You cannot make an investment that returns more valuable and varied dividends. Over 40 sizes and styles. Write for catalog. The Hardie Mfg. Company, Hudson, Mich., Portland, Ore., Los Angeles, Calif.

BARTLETT

Attention Tree Men!

Bartlett No. 1-W Compound Lever Trimmer

Bartlett Pruning Saddle

Material shortages are serious; priority is required to fill your orders. It is recognized that there are many cases of emergency where you need materials and tools urgently. Please help your supplier by making every effort to secure priority rating where conditions warrant.

We want to fill your orders, but cannot continue to do so without your co-operation in the matter of priorities.

BARTLETT MFG. CO.

3028 E. GRAND BLVD.
DETROIT, MICHIGAN